

**Grade: 5**

**Title: Wetlands Ecosystems**

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**Student Learning Objective(s):**

1. The students will define the term ecosystem.
2. The students will define the terms abiotic and biotic, giving examples of each type from an ecosystem.
3. The students will identify essential components in a healthy ecosystem.
4. The students will name and describe different local ecosystems.
5. The students will explore relationships among the animals and plants that populate our local ecosystems.

**LA GLE's**

Grade: 5 #7: Record observations using methods that complement investigations (e.g., journals, tables, charts).

Grade: 5 #19: Communicate ideas in a variety of ways (e.g., symbols, illustrations, graphs, charts, spreadsheets, concept maps, oral and written reports, equations).

Grade: 5 #26: Identify and describe ecosystems of local importance.

**Materials needed:**

- Learning Logs
- Pencils
- Books on Wetlands for Resources
- Internet Access for Resource
- KWLQ Charts for students
- Medium Sized Rocks (enough for each group)
- Small Potted Plants (try and find a local wild flower or another potted plant students will be familiar with, have enough for each group)
- Posters of Louisiana's Local Ecosystems (found at local public library in educational resources)

**Detailed Procedure.** Describe what the students will do in each stage. Include guiding questions you might ask to help students

### **1. Engage:**

#### **Science Process Skill**

☐ Communication

☐ Observation

1. The teacher will tap students' prior knowledge by initiating a discussion on local ecosystems. The teacher will ask students guiding questions to elicit a student definition of the term *ecosystem*: a system formed by the interaction of a community of organisms with their physical environment.
2. Inquiry questions: What is an ecosystem? What things (plants, animals, rocks, etc.) exist in an ecosystem? Do you know what type of local ecosystems we have here in Louisiana? What types of land structures are specific to Louisiana?
3. As the students brainstorm and activate prior knowledge, the teacher will record their answers on the board. Then, the teacher will ask students what they would like to know about Louisiana's ecosystems and have each write down a question they would like answered in their learning logs to come back to later in the lesson.
4. Then the teacher will give each group of students a rock to pass around and observe; recording their findings in their learning logs. The teacher will ask them to discuss what they notice about the rock. After a short class discussion, the teacher will introduce the term *abiotic* (non-living) to students and ask them to brainstorm on more non-living things they might find in an ecosystem.
5. The teacher will then give each group a potted plant to pass around and observe; recording their findings in their learning logs. The teacher will ask students to discuss what they observe. Then, the teacher will introduce the term *biotic* (living) to students and have them brainstorm about what parts of an ecosystem are living.

### **2. Explore:**

#### **Science Process Skills**

☐ Observation

☐ Communication

☐ Prediction

☐ Inference

1. Next, the teacher will take students outside for an observation exploration of their own schoolyard ecosystem (the teacher will have permission for this and bring students to an area that will aid in their discovery). The Students will be given a worksheet to record any observations they make.
2. Before going outside, the teacher will instruct students to sketch a picture of what the area looks on their worksheet. Then to identify and list the parts of the schoolyard ecosystem (dirt, plants, animals, rocks, air, etc.).
3. After this brief observational exploration, the teacher will take students back into the classroom and have a discussion in which students share their findings. The teacher will ask guiding questions to help keep the discussion focused (see below).

- 3. Explain:** The teacher will elicit students understanding by asking guiding questions before, during and after the lesson.

1. What parts of the schoolyard ecosystem did you observe outside?
2. What parts were some biotic parts?
3. What parts were abiotic parts?
4. How did you identify which parts were biotic and abiotic?

5. How do all the parts of the ecosystem work together?
6. Could you tell if the ecosystem was healthy?
7. Where can you find ecosystems?

#### **4. Expand:**

##### **Science Process Skills**

☐ Observation

☐ Communication

1. To help students get a better understanding of the many different local ecosystems that exist in Louisiana (swamps, grasslands and marshes) students will work in groups to research and then share their findings.
2. The Teacher will distribute blank KWLQ charts to students. The teacher will model how to fill out the KWLQ chart for students on the board, and then instruct them to fill out their own. The teacher will explain that the K stands for "What do you *know*?" the W stands for "What do you want to know?" the L stands for "What have you learned?" and Q is for "Questions for further investigation?"
3. After handing out KWLQ charts, the teacher will distribute library resources (books, encyclopedias, magazines, etc.) to groups of students. Each group will focus on one of the local ecosystems: wetlands, swamps and marshlands. If computers are available for student use they will also be used as a resource.
4. Students will be instructed to research their assigned ecosystem and fill out their KWLQ chart to share with the rest of the class. The teacher will encourage students to learn more on their own in order to answer their "Questions for further investigation" and then report back to the class.
5. Key points for students to focus on during the activity: Where is the ecosystem found? What animals live in the ecosystem? What plants live in the ecosystem? What are some interesting facts (at least 3) you learned about the ecosystem?

#### **5. Evaluate:**

1. During the Engage, the teacher will evaluate what students already know about ecosystems. This brainstorming activity will help the teacher to address any misconceptions or validate students' answers.
2. During the Explore part of the lesson, the teacher will be evaluating students understanding by having them fill out a worksheet about their schoolyard ecosystem. Students will be asked to sketch what the ecosystem looks like and list what parts are biotic vs. abiotic. Also, the teacher will be assessing how well students follow directions and record their observations.
3. During the Expand part of the lesson, the teacher will have students work in groups to research and find information on a specific type of local ecosystem (swamps, grasslands and marshes). While student's work; the teacher will circulate through the classroom and monitoring their learning. Finally, the students will share their findings to the rest of the class using their completed KWQL charts.

##### **Brain Compatible Learning Strategies Used in This Lesson:**

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|---|--|---|
| <input type="checkbox"/> Brainstorming/Discussion | <input type="checkbox"/> Drawing and Artwork | <input type="checkbox"/> Graphic Organizers |
| <input type="checkbox"/> Technology (student use) | <input type="checkbox"/> Writing/Journals    | <input type="checkbox"/> Visuals            |

##### **Lesson Source:**

Louisiana Comprehensive Curriculum. (2008). Science Unit 5: Ecosystems. Retrieved April 24, 2009, from Louisiana Department of Education website: <http://www.doe.state.la.us/lde/portals/curriculum.html>

**Resource Books:**

- Stone, Lynn M. (1989). Wetlands. Florida: Rourke Enterprises.
- Stone, Lynn M. (1983). Marshes and Swamps. Canada: Regenstein Publishing Enterprises.
- Johansson, Philip. (2008). Marshes and Swamps: A Wetland Web of Life. New Jersey: Enslow Elementary.
- Staub, Frank. (1995). America's Wetlands. Minnesota: Carolrhoda Books.
- Matthews, Downs. (1994). Wetlands. New York: Simon & Shuster Books for Young Readers.
- Rotter, Charles. (1994). Wetlands. Minnesota: Creative Education.
- Rood, Ronald N. (1994). Wetlands. New York: HarperCollins Publishers.
- Arnosky, Jim. (2000). Wild and Swampy. New York: HarperCollins Publishers.
- Gibbons, Gail. (1998). Marshes and Swamps. New York: Holiday House.
- Gray, Shirley W. (2001). Wetlands. Minnesota: Compass Point Books.
- Lepthien, Emilie U. (1993). Wetlands. Chicago, Ill.: Children's Press.